

ABSTRACT

A system for controlling gain and timing phase includes a variable gain amplifier (VGA) responsive to an input signal, and an analog-to-digital converter (ADC) responsive to a VGA output. A first filter, with tap weight coefficients updated by a first least mean square (LMS) engine, is responsive to an ADC output. At least one tap weight coefficient of the first filter is constrained. A second filter, with tap weight coefficients updated by an adaptation engine, is responsive to a first filter output. The complexity of the second filter is less than or equal to the complexity of the first filter. The system includes: a timing phase controller, in communication with the ADC and responsive to a second filter output, for controlling ADC timing phase; and/or a gain controller, in communication with the VGA and responsive to the second filter output, for controlling VGA gain.